

Claims

1. Process for the preparation of foamed thermoplastic polyurethanes characterised in that  
5 the foaming of the thermoplastic polyurethane is carried out in the presence of thermally expandable microspheres.
2. Process according to claim 1 wherein the thermally expandable microspheres contain a hydrocarbon.
3. Process according to claim 2 wherein the hydrocarbon is an aliphatic or cycloaliphatic  
10 hydrocarbon.
4. Process according to any of the preceding claims wherein an endothermic blowing agent is present.
5. Process according to any of the preceding claims wherein an exothermic blowing agent is present.
- 15 6. Process according to claim 4 or 5 wherein the endothermic blowing agent comprises bicarbonates or citrates.
7. Process according to any of claims 4-6 wherein the exothermic blowing agent comprises azodicarbonamide type compounds.
8. Process according to any of the preceding claims which is carried out by injection  
20 moulding.
9. Process according to any of the preceding claims which is carried out in a mould pressurized with air.
10. Process according to any of the preceding claims wherein the starting thermoplastic polyurethane is made by using a difunctional isocyanate composition comprising an  
25 aromatic difunctional isocyanate.

11. Process according to claim 10 wherein the aromatic difunctional isocyanate comprises diphenylmethane diisocyanate.
12. Process according to claim 11 wherein the diphenylmethane diisocyanate comprises at least 80% by weight of 4,4'-diphenylmethane diisocyanate.
- 5 13. Process according to any of the preceding claims wherein the difunctional polyhydroxy compound comprises a polyoxyalkylene diol or polyester diol.
14. Process according to claim 13 wherein the polyoxyalkylene diol comprises oxyethylene groups.
15. Process according to claim 14 wherein the polyoxyalkylene diol is a poly(oxyethylene-  
10 oxypropylene) diol.
16. Process according to any of the preceding claims wherein the amount of microspheres is between 0.5 and 4.0 parts by weight per 100 parts by weight of thermoplastic polyurethane.
17. Process according to claim 16 wherein the amount of microspheres is between 1.0 and  
15 3.0 parts by weight per 100 parts by weight of thermoplastic polyurethane.
18. Process according to any of claims 4-17 wherein the amount of blowing agent is between 0.5 and 4.0 parts by weight per 100 parts by weight of thermoplastic polyurethane.
19. Process according to claim 18 wherein the amount of blowing agent is between 1.0 and  
20 3.0 parts by weight per 100 parts by weight of thermoplastic polyurethane.
20. Foamed thermoplastic polyurethane having a density of not more than 700 kg/m<sup>3</sup>.
21. Foamed thermoplastic polyurethane having a density of not more than 600 kg/m<sup>3</sup>.

22. Reaction system comprising :

TPU

thermally expandable microspheres.